



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Hurricane Harvey Update (notes: Hurricanes Irma/Maria report starts on page 2; updated information highlighted.)

EPA HQ:

Water Desk Staffing for the coming week is as follows:

Sunday 9/24: David Goldbloom-Helzner

Monday 9/25: Nushat Thomas

Tuesday 9/26: Brian Pickard

Wednesday 9/27-Thursday 9/28: Jeff Fencil

Friday 9/28: Kevin Tingley

Federal Activities:

September 21, 2017 was the last day for response activities with no state cost-share. Cost-share increased to 10% at midnight on September 22, 2017.

EPA Activities: Region 6:

EPA Region 6 is not providing management reports over the weekend.

Drinking Water / Wastewater Assessments

Drinking water and wastewater assessment teams completed their emergency assessments of community water systems and have demobilized. The information below is from the Texas Commission on Environmental Quality website at <https://www.tceq.texas.gov/response/hurricanes>.

Drinking Water: From TCEQ website as of 9/21/17.

	Number of Drinking Water Systems	Population
Fully Operational	2,232	NA
Boil Water Notices	45	12,346
Shutdown	6	1,142

Wastewater and Sewage: From TCEQ website as of 9/21/17.

	Number of Wastewater Treatment Plants
Fully Operational	1,716
Inoperable	9
Operating with Issues	26



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Hurricane Irma/Hurricane Maria Update

On 9/23 at 5:00 AM EDT, Hurricane Maria was located 530 miles south-southeast of Cape Hatteras, NC. Maximum sustained winds were 110 mph. Hurricane-force winds extend outward up to 60 miles from the center and tropical-storm-force winds extend outward up to 240 miles. On the forecast track, Maria will turn to the north and continue on this track through mid-week. The Hurricane may be less than 200 miles east of the Outer Banks of North Carolina by late Wednesday. Maria is a large storm. Tropical storm force winds may begin impacting eastern North Carolina late Monday, and eastern Virginia and the Delmarva Tuesday into Wednesday. Rainfall amounts of 1 to 3 inches with locally higher amounts possible over eastern North Carolina/Virginia. Tropical storm watches may be issued for these areas later tonight.

Hurricane Maria made landfall at Yabucoa in Puerto Rico's southeast shortly after 6 a.m. on 9/20/2017 with winds as strong as 155 m.p.h. It crossed the United States Virgin Islands as a Category 5 storm, then weakened to a Category 4 storm as it passed over PR. The eye of the hurricane left Puerto Rico at noon between the coast of the municipalities of Barceloneta and Arecibo. Power is out throughout the island. Initial assessments are ongoing. The Governor said: "Our island is destroyed."

USVI – There are reports of widespread damage on St. Croix as a result of Hurricane Maria. EPA OSC on St. Croix reports intermittent email and phone service. Very severe tree and power pole damage. The cargo section of the airport destroyed. Roads are barely passable.

With the approach of Hurricane Maria, all EPA USVI/PR response personnel were repositioned to the U.S. mainland with exceptions for an EPA rep in St. Croix and others who sheltered in place in the USVI and PR. However, as of September 24, personnel information from the EPA re-deployment plan was provided to FEMA so flights and lodging needs can be coordinated for the first wave of EPA responders.

- o Puerto Rico: 120 people (50 people on 9/24 + 50 people on 9/30 + 20 people on 10/7).
- o St Croix: 88 people (20 people on 9/24 + 34 people on 9/28 + 34 people on 10/2)
- o St Thomas: 68 people (34 people on 9/28 + 34 people on 10/2)

Region 2 continues to reach out and contact Caribbean Environmental Protection Division (CEPD) personnel post storm. In Puerto Rico, communications are very difficult and a majority of employees have not yet been accounted for. Region 2 is in contact with the Director and Deputy Director; they have been able to contact eighteen (18) employees. In the USVI both employees are safe and in contact with EPA responders. CID has made contact with only one of their two agents in PR. CID/NCERT deploying 2 agents to PR separate from the EPA response action to assist CEPD in locating employees.

CEPD Guaynabo office building received no visible damage. The building has water and is running on generator power. City View Plaza management has indicated that due to limitations in access to gas supply, generator use in the building will start operating with limitations, they will inform Region 2 of the upcoming operating schedule. EPA OSCs will



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activate the PSU satellite sleds at the CEPD office on 9/23/2017 to provide more consistent communications and internet service.

The CEPD offices in St. Thomas, USVI and Vieques, PR have not been assessed post Hurricane Maria. Priorities will include those servicing hospitals and sensitive populations.

Local/State Activities:

Puerto Rico:

There is a 100% power outage in PR. All generation facilities are believed to be offline. Puerto Rico Electric Power Authority (PREPA) anticipates overflight damage assessments of transmission assets as soon as resources are available. Significant flooding and debris severely limit the ability to safely conduct damage assessments.

The President has signed Emergency Declaration FEMA-3391-EM for the Commonwealth of Puerto Rico for Hurricane Maria.

U.S. Virgin Islands (USVI):

As of 1400 ET on 9/22/2017 FEMA reports that the drinking water facilities on St. Thomas and St. Croix have been re-energized.

The President has signed Emergency Declaration FEMA-3390-EM for the Territory of the U.S. Virgin Islands for Hurricane Maria.

All Region 4 State EOCs, with the exception of Florida, are back to normal operations.

Federal Activities:

FEMA:

The FEMA RRCC in Colt's Neck NJ has transferred all operations from that location to the NRCC in Washington, D.C. Personnel are developing plans for the resumption of post-storm activities, including assessments at regulated facilities and NPL/Removal sites.

On 9/20/2017, The President has signed a Disaster Declaration FEMA-4340-DR for the Territory of the U.S. Virgin Islands for Hurricane Maria. On 9/20, The President has signed a Disaster Declaration FEMA-4339-DR for Puerto Rico.



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Effective at 2330 on 9/20/2017, the FEMA Region IV Regional Response Coordination Center (RRCC) transitioned from Level II (full activation) to normal operations. All members of the RRCC were released, including those staffed under ESF-10.

EPA Activities:

Region 2:

The REOC Planning and Operations Sections are using Hurricane Irma assessment plans to develop post-Hurricane Maria plans for the assessment of fixed facilities, Superfund sites, critical infrastructure, areas of special concern, and debris management.

EPA's six-person water assessment team has departed from Atlanta for San Juan on 9/23, where they will continue onto to St. Croix on 9/24. These include EPA water sampling teams made up of OSCs and water sampling personnel.

Drinking Water labs on St. Thomas and St. Croix are awaiting generators from the Army Corps. In St. Croix, EPA liaison is coordinating with USACE counterparts to deliver appropriate generator to Ocean Systems Laboratory for water testing.

On 9/23, EPA issued an order to the Federal Emergency Management Authority (FEMA) and the Department of Defense (DOD) that provides direction on supplying of clean drinking water in the U.S. Virgin Islands in response to impacts to the island's drinking water system from Hurricane Maria and Hurricane Irma. The order authorizes FEMA and DOD to install and operate temporary water treatment units that will provide a supply of clean drinking water. U.S. Virgin Islands public water systems are currently not in operational condition. The lack of clean alternative water supplies has created the potential for significant public health impacts. USVI public water systems have been significantly impacted by Hurricanes Maria and Irma and subsequent flooding, including by a loss of electrical power, and are not yet fully able to provide adequately treated water to meet the needs of those affected areas. EPA is monitoring environmental and public health conditions across the U.S. Virgin Islands and Puerto Rico and is working closely with federal, territorial and local officials to ensure impacts from the hurricanes are addressed in order to protect public health. The order is at <https://response.epa.gov/sites/12403/files/USVI%20SDWA%20Order%20Sept%2023.pdf>.

On 9/23, EPA announced that it will exercise enforcement discretion for mobile power generators being imported into the United States that will be used as emergency sources of power in Puerto Rico as a result of Hurricane Maria. Under this "no action assurance," EPA will not pursue enforcement actions for certain violations of the Clean Air Act for mobile power generators being imported for use in Puerto Rico that have not been certified to meet U.S. pollution control standards. EPA's no action assurance was issued at the request of the Governor of Puerto Rico as preliminary information indicates extreme damage to Puerto Rico's power grid, including near-total destruction to power transmission. This no action assurance covers mobile power generators that are imported for use in Puerto Rico until January 31, 2018. EPA policy allows the Agency to issue no action assurances in cases where it is necessary to avoid extreme risks to public health and safety and where no other mechanism can adequately address the matter. EPA believes that the exercise of enforcement discretion in these circumstances is in the public interest and will help address the emergency circumstances in Puerto Rico.



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The National Disaster Recovery Framework (NDRF) has not yet been activated in either PR or the VI. There is an expectation that it will be activated as soon as possible and therefore all partners are being engaged for awareness, planning and visibility. EPA has already provided data as part of the advanced evaluation and will continue to do so. All 6 Recovery Support Functions including Infrastructure Systems, are expected to be stood up for both PR and the VI.

Region 4:

The EPA Region 4 Water Protection Division (WPD) received funding totaling \$75,000 under an ESF-3 MA sub-task to support the U.S. Army Corps of Engineers (USACE) drinking water and wastewater facility assessments. The WPD continues to coordinate with the Florida Department of Environmental Protection (FDEP) and the USACE.

The U.S. Army Corps of Engineers' (USACE) request for additional ESF-3 support has been fulfilled. The Region 4 Facility Assessment Support Team (FAST), completed 934 call-down assessments as of September 21st. EPA Water Team performed an assessment of the Waste Water Treatment Plant(WWTP) in Everglades City on 9/21/2017. The USACE/EPA Water Team completed assessments in Everglades City and redeployed, 9/22/2017, to Key Largo to assess the WWTP. The USACE/EPA Water Team inspected booster stations along the drinking water pipeline to Key West. The Florida Department of Environmental Protection (FDEP) is developing plans for assessing the status of 3,561 non-community public water systems, and will submit the plan to the USACE/R4 FAST on 9/25/2017.

Updated information is below under 'Drinking Water and Wastewater System Status – Florida'

Drinking Water and Wastewater System Status

Region 2:

Puerto Rico System Status. As of 1100 EST on 9/23/2017; 458,459 PRASA clients or 42% of the population is without drinking water service. This does not include over 200 non-PRASA systems without power, which account for 4% of the PR population. Generators are being used to power drinking water facilities and may run out of gas, and additional people will lose drinking water. PR has an island- wide boil water order. Region 2 has locations for all these facilities and will transmit in a spreadsheet with the information by 9/24/2017.

PRASA labs are not functioning due to power and damage issues. PRASA has people to sample but no labs. PRDOH has laboratory capability, but needs growth media and other supplies.

The following is a status of PRASA Waste Water Treatment Plants:

- Carolina and Puerto Nuevo are not working
- Naranjito – Problems with Generator
- Arecibo is working intermittently
- Camuy is having problems with generator



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- Ciales, Utuado, Vega Baja, Lajas, and Dorado: No contact

Virgin Islands Drinking Water Status: On 9/23/17, EPA Region 2 issued an order pursuant to the SDWA that authorized FEMA/DOD to pump drinking water to the USVI. FEMA/DOD are working to deploy 4 reverse osmosis units in St Croix to deliver drinking water to the following impacted areas:

- Stoney Ground
- Cane Bay
- Altima
- Cramer Park

DPNR wants EPA to conduct sampling, especially bacteria, and analysis. They also would like any ice being brought to the USVI analyzed for bacteria, at a minimum.

The REOC was able to get some generators shipped on 9/23/17 to the USVI to help power DPNR and WAPA labs. There is a verbal indication of a boil water order on USVI.

As of 1400 ET on 9/22/2017 FEMA reports that the drinking water facilities on St. Thomas and St. Croix have been reenergized.

On St. Croix, WAPA water distribution crews are working to resolve an issue with water availability. WAPA personnel is now installing a standby generator to energize the Contentment pump station. Once functional, potable water will be pumped to St. Croix's west end and allow the Kingshill tank to gain storage. The tank has been emptied by an apparent leak which developed during the hurricane. Electrical service has also been restored at the Richmond pump station which will allow for the continued building of storage. Currently, there are 7.5 million gallons of water on St. Croix which is a three-day water supply.

St. John has three days of emergency water storage. St. Thomas has two days of water storage. Customers in higher elevations will experience low pressure or no service at all until all pump stations have been restored with electricity.

The Seven Seas water production facility is fully operational on St. Thomas. Electrical service has also been restored to the Donoe pump station and storage is being replenished there as well as at the storage tanks on Sara Hill.

There is no information on wastewater facility status in USVI at this time.

Region 4:

Florida:

Boil Water Notices (BWN): Boil water notices and advisories are published on the Florida Department of Health's website (<http://www.floridahealth.gov/environmental-health/drinking-water/boil-water-notices.html>). As of 1600 ET, the web site lists 478 BWN issued since 9/11/2017, of which 305 have been rescinded, resulting in 173 active BWN. The website reflects a lower number of BWN than in the table below, which was provided by Region 4 at 0900 ET.



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Water and Wastewater System Assessments:

The Everglades City WWTP became non-operational on 9/13/2017, and partially returned to service with generator power on 9/19/2017. The system start-up was hindered by weakened integrity issues. It is unclear if the leaks were only in the wastewater system. The USACE/EPA Water Team completed assessments in Everglades City and redeployed, 9/22/2017, to Key Largo to assess the WWTP.

Water and wastewater facilities continue to submit their requests for assistance. The WPD compiled a status of community drinking water systems (CWS) and POTW that may be used during post-storm damage assessment in Florida (see the two tables below).

Total Number of Community Drinking Water Systems (CWS) and Total Population Served in				
	Large CWS (Over 3,300)		Small CWS (under 3,300)	
	# Systems	Population Served	# Systems	Population Served
Operational:	390	19,101,966	1,179	678,066
Partially Operational:	6	188,818	15	16,284
Non Operational:	0	0	6	456
Unknown:	0	0	44	15,747
Totals:	396	19,290,784	1,244	710,553
Boil Water Notices	179 (478 issued – 299 rescinded)			
Comments: Data is compiled from the State of Florida's StormTracker system. The inventory of public water systems in StormTracker consists of all 1,630 Community Water Systems (CWS) and 11 non-community public water systems regulated by the State. These facilities were identified by Florida as the				
Operational: Facility producing drinking water for greater than 90% of customers under normal operating				
Partially Operational: Facility producing drinking water under adverse conditions and/or supplying less				
Non Operational: Facility not producing or supplying drinking water				
Unknown: Status of facility unknown at this time				



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Total Number of Publicly-Owned Wastewater Treatment Plants (POTWs) All Florida Counties			
	NPDES Permitted Facilities		State Permits (Non-NPDES)
	POTW	Non-POTW (Industrial)	
Operational:	143	242	1,702
Partially Operational:	2	1	41
Non Operational:	0	0	93
Unknown:	0	0	173
Totals:	145	243	2,009
<p>Comments: Data is compiled from the State of Florida's StormTracker system. The NPDES universe tracked in StormTracker represents a subset of the total inventory of NPDES permitted systems that are identified by the State of Florida as the most critical for operational status determinations following major disasters.</p> <p>This report shows that 99% of the POTWs are Operational, no change since last report of 99%. This report shows that 99% of the Non-POTW NPDES Permitted Facilities tracked in StormTracker are Operational, no change since last report of 99%.</p> <p><u>Operational:</u> Facility & associated collection system is properly conveying, and effectively providing wastewater treatment, in accordance with applicable permit conditions and regulations. (Operating on full capacity)</p> <p><u>Partially Operational:</u> Facility and/or associated collection system is properly conveying and providing wastewater treatment at a compromised capacity, i.e. one or more treatment train components are non-operational.</p> <p><u>Non Operational:</u> Facility and/or associated collection system is not providing wastewater treatment in accordance with applicable permit conditions and regulations.</p> <p><u>Unknown:</u> Status of facility unknown at this time</p>			



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Georgia:

This table summarizes community water system status within Georgia as per the last state report (last update: 9/20/2017).

Total Number of Community Drinking Water Systems (CWS) and Total Population Served in Georgia		
	# Systems	Population Served
Operational:	186	7,203,619
Operational w/ Conditions:	8	53,917
Non Operational:	3	40,322
Unknown:	**	2,424,980
Totals:	1,749	8,917,820
Boil Water Notices	75 Boil Water Advisories reported to the SOC.	
Comments: Data is compiled from data collected by Georgia EPD drinking water staff, EPD regional offices and the ESF-3 Water Desk at the Georgia SOC. The inventory of public water systems in <i>Georgia</i> consists of all 1,749 Community Water Systems (CWS). **EPD has provided status updates of all community water systems with surface water sources. All community water systems using ground water are being contact by EPD District Offices and associated resources requests are forwarded to the SOC ESF-3 desk. All community water systems using surface water as a source have been assessed.		
<i>Operational:</i> Facility producing drinking water for greater than 90% of customers under normal operating		
<i>Operational with Conditions:</i> Facility producing drinking water under consumer advisory, e.g., boil water		
<i>Non Operational:</i> Facility not producing or supplying drinking water		

Federally Recognized Tribes:

No significant updates were provided by the Region 4 Tribes during the reporting period.